

## ABSTRACT

The invention provides a method of identifying anti-nematode compounds and further provides transgenic nematodes that may be used to practice the method. In particular, the invention provides a screen for compounds that inhibit a nematode secretion pathway e.g., compounds that inhibit the secretion of proteins by nematodes. The transgenic nematodes express reporters for nematode secreted proteins. In preferred embodiments of the invention the screen is performed using *C. elegans*, i.e., certain embodiments of the invention utilize *C. elegans* and *C. elegans* secretory pathways as a model system for parasitic nematodes and parasitic nematode secretion pathways. The invention also provides pharmaceutical compositions that may be used in the treatment and prevention of nematode infection in humans and animals and anti-nematode agents that may be used to protect plants from plant-parasitic nematodes. In addition, the invention provides a genetic screen for identifying additional targets for anti-nematode compounds.

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